

# PRV

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(71) Sökande                      Microsoft Corp, Redmond WA US  
Applicant (s)

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Stockholm, 2001-04-11

För Patent- och registreringsverket  
For the Patent- and Registration Office

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Avgift  
Fee            170:-

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MICROSOFT CORPORATION

Ansökningsnr

Vår referens

SE-2008505

METHOD AND SYSTEM FOR PROVIDING MOBILE SERVICES

The present invention is based on the insight that if a UID (Unique Identifier) of an e-mail used by a POP3, IMAP4 or similar mail server host could be known beforehand, an e-mail stored at the POP3/IMAP4 server could be retrieved without the overhead of having to ask the server to list all the POP3/IMAP4 e-mail headers. This is accomplished by combining the technique of transferring SMS messages including smart notifications with modified UIDs of a POP3/IMAP4 server. A smart notification in an SMS message transferred to a mobile user points out a received e-mail by means of a JobID (Job Identifier). In the POP3/IMAP4 server, the UIDs normally used for identifying an e-mail are exchanged for JobIds used by the smart notifications in the SMS messages. These JobIds are generated by notification engine, operatively connected to the POP3/IMAP4 server. The invention is applicable with any mail server host that uses UIDs for identifying one e-mail out of all e-mails stored at the server and, thus, is not limited to POP3/IMAP4 mail server hosts.

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## Microsoft Patent Predisclosure Document

**Title of Invention** Combine SMS and POP3 for retrieval of e-mail  
**Date:** 25 November, 1999  
**Document Author(s):** Mattias Häggström (mattiash) (MSReference# 150400.1)

### Personal Comments (mattiash)

This is basically another way of using the POP3 standard in a smarter way. The purpose is to make it more suitable for mobile users (GSM data and SMS).  
 I don't know whether it is reasonable to patent such a solution or architecture, but I was requested to write this patent suggestion and see what might happen.

### Prior Disclosure

*[Has there been any disclosure of the invention outside of Microsoft? If so, please identify the party (or parties) to whom disclosed, as well as the date and circumstances under which the disclosure was made (signed/unsigned non-disclosure agreement, etc.). Disclosure may include such things as an offer for sale, a demonstration, or a publication describing a novel aspect of the invention.]*

There has to my knowledge not been any disclosure regarding this outside of Microsoft.

### Introduction

*[Please provide a high level description of the invention, including the names of the people who contributed to the invention.]*

It is for people working in a mobile environment (GSM 9600 bps) hard to handle e-mail efficiently, in the case where standard e-mail solutions are used. Although standards are used, those standards are designed mainly for an office environment where local area networks exist.

This invention combines the standard protocol POP3 for retrieval of e-mail together with SMS notifications for new e-mail. The result is a much more efficient environment to work with for normal users.

No changes are done to existing protocols. On the server, a standard POP3 server is used. The server is also able to push out notifications of new e-mail via SMS. The unique ID ("UIDL") given to every mail, defined by POP3, must be the same used for the POP3 server and the SMS notifications pushed out.

Clients will combine the usage of those SMS and POP3.

The following people involved have contributed to the invention:

Mattias Häggström (mattiash)  
 Anders Hagberg (andersha)

### Strategic Importance of Invention:

*[Please provide reasons why you think patent protection for this invention is important to Microsoft. Factors to consider include (1) is it core technology; (2) is it a feature that gives Microsoft a competitive advantage; (3) is it a feature that our competitors would want to copy; (4) does it include new APIs, file formats, network protocols, data schema or other components relating to product interoperability; (5) is it related to a standard. Please include who you consider the most likely competitors and/or competitive products for this technology.]*

The invention builds on use of existing standards. (POP3). We also add functionality via the pushed e-mail notifications over SMS. Those SMS are today in a proprietary format, but something that we could make public. (Note, this format, used within ICSA today, should probably be extended and have a common format with Airstream)

There are other vendors pushing out e-mail notifications over SMS already today. However, most of those solutions only send out a plain text displayed to the user.

Other vendors of e-mail platforms for mobile usage are also interested in giving the end-user an efficient way of handling e-mail. By offering end-users this solution, the end-user would reduce the time spent on-line and thereby the cost. Accordingly, this would give us a competitive advantage.

Possible competitors would basically be all of MIBU's competitors today.

### Motivation for the Invention:

*[Describe (1) the problem addressed by the invention (e.g., limitations of prior products of Microsoft, or others), and (2) your solution to the problem (including what "new" things your invention does and a high-level description of how it does them).]*

The problem is poor performance when using any "standard e-mail solution" for users (subscribers to GSM carriers) working with e-mail in a mobile environment. For the user this situation is very frustrating.

"Standard e-mail solution" could be any common e-mail server supporting SMTP/POP3 used with any common client supporting SMTP/POP3.

Examples of servers are Microsoft Exchange, Netscape Messaging Server and Lotus Notes. Examples of clients are Microsoft's Outlook, Netscape's Communicator or Qualcomm's Eudora.

The solution is the combination of

POP3

SMS Notifications containing POP3 header information

A standard POP3 server that uses the same POP3 UIDL as used in the SMS Notifications

A client that uses POP3, but that also supports update of headers via SMS

BUGBUG? Should examples be in here??

Suppose the user has a solution supporting this. The user's client has an Inbox folder for incoming e-mail. Whenever an SMS message containing an e-mail notification arrives to the user's mobile phone, the Smart Notification will be interpreted (each field, such as 'From', 'Subject', 'Size' etc.) and stored in the Inbox folder. The user can select to mark only important e-mail messages for download. When the user connects to the server to download those messages via POP3, all non-important e-mail will not be downloaded. This saves valuable time for the user.

### Description of the Invention:

*[Describe your proposed implementation of the invention, including the architecture and design details of the implementation. The design details should include a description of the component parts of, and individual operations performed by, your implementation. The use of a specific example, showing how the invention solves the problem being addressed, can be particularly helpful. You should also mention whether you have thought of any other implementations, or applications of, your invention. In most cases, 1-2 pages of description should be adequate to start the patent application process, although a more detailed description may greatly enhance the efficiency of the process.]*

-- Background Information --

POP3: The "POP3" standard is the most common standard for retrieving e-mail from a server. The way to find out if there are new e-mail messages on the server is normally to download all new messages from the server. Accordingly that is a slow operation. Bear in mind that the user is assumed to connect via a slow connection (currently 9600 bps is used over GSM).

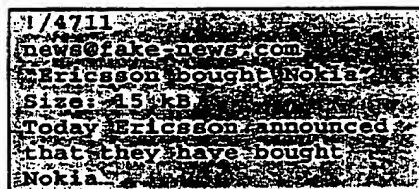
ICSA: ICSA is a mail server platform that supports standards such as POP3 and SMTP. In addition to act as a normal mail server, ICSA has a support for GSM SMS. Whenever an e-mail message arrives via the SMTP server (from some external address, such as a Hotmail account), an SMS message will be sent out to the user, notifying her/him that a new e-mail message exists on the server. This SMS message is formatted according as a "Smart Notification" (described later).

Today the user can select to download the e-mail via any of the following access methods to ICSA:

1. The web-mail interface
2. POP3
3. IMAP4
4. A SIM Toolkit Application

Note that the Smart notification contains a unique ID for the e-mail, called JobId within ICSA. The JobId is included in the Smart Notification and also used as UIDL in POP3.

Smart Notifications: By sending out SMS messages from the e-mail server, the user will be notified when e-mail arrives to the server. These SMS messages are formatted in a both machine- and human-readable format and contains header information to identify the e-mail on the server. This is a solution that MIBU's customers are using already.



In addition to the invisible text,

**End-2-End solution:**

- The user doesn't need to connect to check for new e-mail
- The user doesn't need to download all e-mail
- The user doesn't need to run the slow POP3 header-listing.

**Diagrams and Flow Charts:**

*[To support the description provided above, please include: (a) at least one block diagram showing the architecture of the system that implements your invention, and (b) at least one diagram illustrating the primary steps performed by your invention.]*

**Additional Information:**

- *List the names of any people who contributed to the invention.*

Mattias Häggström (mattiash)  
Anders Hagberg (andersha)

- *List any earlier, current or anticipated MS products that may use your invention:*

- *List and attach (or provide pointers to) any documents that provide additional information about your invention or the product to which it relates, including specifications, journal articles, slide presentations, test/performance results, etc.]*

Smart Notifications (used for ICSA)

- *List any other sources that would provide helpful background information or illustrate prior work of others in this area (including, e.g., journal articles, text books, product literature, products, and specifications):*

[POP3] "Post Office Protocol - Version 3", Myers J, Rose M, RFC 1939, May 1996

CLAIMS

1. A method at a mail server site, the mail server site being operatively connected to a digital radio communication network and arranged to provide mobile e-mail services to mobile stations by means of a server host operating in accordance with POP3- or IMAP4-like protocols, wherein the method includes the steps of:
- 5 allocating, in an SMTP server, a job identifier to a received e-mail;
- 10 storing said job identifier and said received e-mail in a database at a position associated with a client host to which said received e-mail was addressed;
- 15 treating, in said server host, said job identifier as the unique identifier for said received e-mail when communicating with said client host in accordance with the POP3- or the IMAP4-like protocol; and
- 20 transmitting a notification to a mobile station defined by a mobile subscription number which is associated with said client host in said database, the notification indicating that said e-mail has been received and including at least said job identifier.
2. The method as claimed in claim 1, wherein said notification includes header information of an e-mail.
- 25 3. The method as claimed in claim 1 or 2, wherein said server host, when operating in accordance with said POP3- or said IMAP4-like protocol, is responsive to a received client host command in which a present unique identifier has the same format and syntax as that of said job identifier.
- 30 4. The method as claimed in any one of claims 1 - 3, wherein said server host, when responding to a client host command which includes a unique identifier, matches the unique identifier against job identifiers that are
- 35

stored in said database and that are associated with the client host from which the client host command was received.

- 5           5. The method as claimed in any one of claims 1 - 4, wherein said step of transmitting a notification includes transmitting a message using a message service provided by said digital radio communication network, said job identifier being included in the payload of said message.

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6. A computer-readable medium having computer-executable components for causing a mail server site, which is operatively connected to a digital radio communication network, to provide mobile e-mail services to mobile stations by means of a server host operating in accordance with POP3- or IMAP4-like protocols, the computer-executable components including:

- a component for allocating a job identifier to a received e-mail;
- 20           a component for storing said job identifier and said received e-mail in a database at a position associated with a client host to which said received e-mail was addressed;

- a component implementing a POP3- or IMAP4-like server host, which server host uses said job identifier as the unique identifier for said received e-mail when communicating with said client host in accordance with the POP3- or the IMAP4-like protocol; and
- 25

- a component for initiating transmission of a notification including at least said job identifier to a mobile station, which mobile station is defined by a mobile subscription number being associated with said client host in said database, in order to indicate to said mobile station that said e-mail has been received by
- 30
- 35 the mail server site.

7. The computer-readable medium as claimed in claim 6, wherein said notification includes header information of an e-mail.

5           8. The computer-readable medium as claimed in claim 6 or 7, wherein the component implementing a POP3- or IMAP4-like server host is responsive to a received client host command in which a present unique identifier has the same format and syntax as that of said job identifier.

10           9. The computer-readable medium as claimed in any one of claims 6 - 8, wherein the component implementing a POP3- or IMAP4-like server host, when responding to a client host command which includes a unique identifier,  
15 matches the unique identifier against job identifiers that are stored in said database and that are associated with the client host from which the client host command was received.

20           10. The computer-readable medium as claimed in any one of claims 6 - 9, wherein the component for initiating transmission of at least said job identifier initiates the transmission of a message of the kind provided by a message service of said digital radio communication  
25 network, said job identifier being included in the payload of said message.

30           11. A mail server site operatively connected to a digital radio communication network and arranged to provide mobile e-mail services to mobile stations, the mail server site including:  
an SMTP server arranged to allocate a job identifier to a received e-mail and to store the job identifier and the received e-mail in a database at a position  
35 associated with a client host to which the received e-mail was addressed;



a server host arranged to operate in accordance with a POP3- or a IMAP4-like protocol, which server host is configured to use said job identifier as the unique identifier for said received e-mail when communicating  
5 with said client host; and

means for indicating to a mobile station that said e-mail has been received by the SMTP server by transmitting a notification including at least said job identifier to the mobile station, which mobile station is  
10 defined by a mobile subscription number being associated with said client host in said database.

12. The mail server site as claimed in claim 11, wherein said notification includes header information of  
15 an e-mail.

13. The mail server site as claimed in claim 11 or 12, wherein said server host is configured to be responsive to a received client host command in which a  
20 present unique identifier has the same format and syntax as that of said job identifier.

14. The mail server site as claimed in any one of claims 11 - 13, wherein said server host is arranged to,  
25 when responding to a client host command which includes a unique identifier, match the unique identifier against job identifiers that are stored in said database and that are associated with the client host from which the client host command was received.

15. The mail server site as claimed in any one of claims 11 - 14, wherein said means for indicating to a mobile station that said e-mail has been received is arranged to transmit a message using a message service  
30 provided by said digital radio communication network, wherein said job identifier is included in the payload of said message.

16. A method in a mobile station for utilizing mobile e-mail services provided by a mail server site, the services being provided via a digital radio  
5 communication network and by means of a server host operating in accordance with a POP3- or a IMAP4-like protocol, wherein the method includes the steps of:  
receiving a message via a message service provided by the digital radio communication network;  
10 extracting a job identifier from the received message; and  
accessing at least part of an e-mail stored at the mail server site by transmitting a client host command to the server host, in which command the job identifier is  
15 used as the unique identifier for the e-mail which is to be accessed.

17. The method as claimed in claim 16, including the step of extracting e-mail header information from said  
20 received message.

18. A mobile station including a program storage device storing computer-executable components which when executed causes the mobile station to make use of mobile  
25 e-mail services provided by a mail server site, the services being provided via a digital radio communication network and by means of a server host operating in accordance with a POP3- or a IMAP4-like protocol, the computer-executable components including:

30 a first component for receiving a message via a message service provided by the digital radio communication network and for extracting a job identifier from the received message; and

a second component implementing a POP3- or IMAP4-  
35 like client host, which component is arranged to access at least part of an e-mail stored at the mail server site by transmitting a client host command to the server host,

in which command the job identifier is used as the unique identifier for the e-mail which is to be accessed.

19. The mobile station as claimed in claim 18,  
5 wherein said first component further is arranged for extracting e-mail header information from said received message.